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PROJECT SUMMARY REPORT
White Consolidated Industries
Whitinsville, MA

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Presented To: White Consolidated Industries

Presented By: NEPCCO, Inc./I.T. CORP.
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1.0 INTRODUCTION/BACKGROUND

As a result of White Consolidated closing operations and selling the property located on One Main Street in Whitinsville, Massachusetts, an environmental assessment study was conducted by Caswell, Eichler, and Hill, Inc. The findings of this study concluded that some groundwater contamination existed in the vicinity of building 9. Contamination appeared to be the result of cutting oil used during operations and manifested itself as leachate into a "raceway", which emptied into the Mumford River.

Recommendations to remediate this problem included the installation of lateral trench/sump recovery system to be located between the assumed source and the "raceway". On December 9, 1985, NEPCCO, Inc. was contracted to install the trench/well system as well as supply a double pump recovery unit for product collection. The remainder of this report will outline the on site construction tasks, permitting requirements, and system start-up and monitoring.

2.0 CONSTRUCTION DETAILS/SITE CONSTRUCTION ACTIVITY

12/23/85: The installation of a 12-inch diameter recovery well was attempted adjacent to contaminated raceway. Several borings were attempted using a rotary bucket auger drill rig, but all failed due to the numerous subsurface obstructions in this area.

Site plans of the complex were inspected and it was determined necessary to excavate the recovery trench well closer to building 9 in an attempt to decrease the number of below ground obstructions.

1/6/86 thru 1/10/86: A 150 foot long interceptor/recovery trench was excavated parallel to building 19, using a track mounted Kamatsu excavator. Excavation began at the south end of the building and extended to a depth of approximately 15 feet below grade. The trench wall closest to the building was located approximately 20 feet from the structure. The depth of the trench decreased to its shallowest on the south end where it extended to approximately 12.5 feet below grade. An impermeable, oil resistant liner manufactured by Containment Systems Inc. was positioned at the downgradient wall of the trench approximately 5 feet below grade extending to the bottom of the trench.

A 24-inch diameter sleeve was also inserted into the open excavation approximately 50 feet from the southern end of the trench. This large diameter sleeve would serve to access the natural formation for the installation of the recovery well.

In order to observe fluid movement throughout the trench and verify hydraulic connection, three fully screened, .020 slotted, 4-inch diameter PVC observation wells were inserted into the open excavation prior to the backfilling operation. The excavation was backfilled to approximately 5 feet below grade using 290 yards of 3/8 inch pea-stone. In order to prevent siltation from overlying sediments the stone was covered with polyethylene liner, which was placed between two layers of salt hay.

All soil which was excavated from the area of contamination was stored on site completely encapsulated by polyethylene sheeting to prevent leaching and erosion. A significant layer of floating phase hydrocarbon contamination was not observed during the trenching operation by NEPCCO.

1/13/86: Stockpiled soil was sampled for classification of transport and labelling and disposal options for off site transportation. Four random grab samples were collected in the presence of the Massachusetts D.E.Q.E. representative, stored in glass containers and analyzed for PCB contamination, EP toxicity, RECRA metals, flash point and oil and grease content (see Appendix 1).

1/14/86 thru 1/17/86: A 12-inch diameter pumping well was installed inside the 24-inch diameter sleeve. In order to back drilling rigs over the well location, a portion of the trench surrounding the sleeve was backfilled to grade using clean fill. Once the backfilling was completed, the rotary bucket drill rig was positioned over the borehole and extended the depth of the well to approximately 17 feet where bedrock was encountered. A 12-inch diameter, .050-inch slotted-louvered well screen as manufactured by Doerr Metal, Inc. was inserted into the borehole with the annular space packed with a blend of #2 and #3 Morie gravel. Once the gravel pack was in place, the sleeve was extracted and the well/trench system was completely developed using a 10 inch diameter suction bailer. All development water was collected in a 3500 gallon vacuum tanker and delivered to EWR, Inc. in Waterbury, Connecticut for disposal.

5/27/86 thru 5/30/86: Piping and backfilling of the interceptor trench to ground surface was completed. Prior to actual backfilling operations, the 12-inch diameter recovery well was cut down to approximately 3 feet below grade and encased in a 4 foot by 4 foot precast concrete manhole. Associated water discharge lines, product discharge lines and electrical conduits were also laid in the trench connecting the recovery well to the water treatment and product recovery platform. The ultimate discharge of the treated groundwater was directed to the local sanitary sewer, which crossed the interceptor trench approximately 5 feet from the recovery well. Upon

completion of the plumbing installation, the open excavation was backfilled to grade using the previously excavated petroleum stained soil. The sewer connection was made by a town approved plumber.

The remainder of contaminated soil was hauled off site to an asphalt batching plant by licensed waste haulers, McDonald and Watson, Inc.

6/3/86 & 6/4/86: A 65 foot high, 18-inch diameter air stripping tower was erected adjacent to building 9 for removal of volatile organic compounds from the groundwater. The packed tower erasing unit extends approximately 5 feet above the existing building, however, only a 40 foot section of this tower is used for actual water treatment purposes. The remaining 25 feet extension was designed to remove any airborne volatile from the immediate vicinity of building windows. A discharge line flow meter was installed as per the requirements of the sewer department.

A 275 gallon product recovery tank was installed next to the air stripping unit and was enclosed by a chain link security fence. The product tank was mounted on a cradle in order to meet D.E.Q.E. above ground tank regulations.

6/13/86: Equipment was tested for treatment efficiency and overall competency. The dewatering - pump was temporarily installed and operated for approximately two hours. During this time, lines and fittings were monitored for possible leaks. Observation wells were monitored to evaluate the hydraulic connections of the trench system and influent and effluent water samples were collected at the air stripping tower to verify efficiency. This information was compiled and submitted in a letter dated August 29, 1986.

6/20/86: A 3/4 h.p. Hydropurge dewatering pump and 1/3 h.p. Petropurge product pump were permanently installed along with associated sensory probe and control panels. The packed tower aeration unit and associated above ground water lines were winterized using heat tape and insulation. The three, 4-inch diameter observation wells which were installed in the recovery trench were cut down below grade and outfitted with flush mounted access covers. This was the final day of construction involving NEPCCO Inc. at the Whitinsville Complex. All work following this date included routine maintenance and monitoring of the equipment.

In addition to the above work, the Massachusetts D.E.Q.E. required the entire recovery trench be asphalted in order to prevent surface run-off and natural recharge from entering the treatment facility.

3.0 SITE AND RECOVERY SYSTEM MONITORING

3.1 Site Monitoring

NEPCCO conducted weekly visits to the site which included the following scope of work:

- 1) Inspection and maintenance of the Hydropurge, Petropurge and Airpurge systems.
- 2) Recording water table and floating phase hydrocarbon thickness at the monitoring wells and recovery well using a sonic interface detector.
- 3) Monthly sampling and analysis of air stripper influent and effluent by E.P.A. Methods 601 and 602 for volatile organics.

In addition, groundwater monitoring wells were sampled and analyzed for volatile organics on February 17, 1987 (see Table 1 and Appendix 2).

TABLE 1
Groundwater Quality at Monitoring Wells
White Consolidated Industries
Whitinsville, MA
Sample Date: February 17, 1987
Analytical Method: E.P.A. Method 601, 602

	<u>Well 1</u>	<u>Well 2</u>	<u>Well 3</u>
1,1 - Dichloroethene	ND	ND	ND
1,1 - Dichloroethane	17	5	4
1,1,1 - Trichloroethane	12	2	3
Trichloroethene	3	1	1
Tetrachloroethene	3	1	12
Trichlorofluoromethane	ND	ND	ND
Benzene	12	ND	ND
Toluene	57	ND	11
Xylenes (total)	40	ND	31

Results are given in p.p.b.

ND - non-detected; method detection limit 1 p.p.b.

3.2 Groundwater Quality Data

The sample data presented in Table 1 and the groundwater quality of the air stripper influent presented in Table 2 indicate that only low background levels of volatile organics are present in the groundwater. In addition, due to the low influent levels, the air stripper treatment efficiency was 99-100% for volatile organic removal of these components (see Appendix 3).

The lack of air stripper influent data during September 1986 was due to the local sewer department required and approved flowmeter becoming clogged with silt. The flowmeter location was changed from the air stripper influent line to the effluent line after discovering this problem. The meter was not used during the operating period of 10/8/86 to 10/21/86. The accuracy of the meter is unknown, but the groundwater flow has been estimated at 6-8 gpm. The October, 1986 sample was mistakenly analyzed for only EPA Method 602 constituents, and these compounds are typically residual or non-detectable in concentration in the groundwater at this site.

Figure 1 depicts the declining trend in the air stripper influent V.O.C. concentration over time. The highest V.O.C. concentration was recorded on August 6, 1986. The most recent sample had the lowest V.O.C. concentration.

3.3 Floating Hydrocarbon Contamination

The hydrocarbon contaminant which instigated the groundwater remediation plan was the high viscosity cutting oil used at the facility. The product was analyzed prior to initiating remediation and was found to closely resemble #6 Diesel Oil. No PCB's were detected (see Appendix 4).

CERTIFICATE OF ANALYSIS

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CLIENT: NEPCCO

ANALYSIS REQUESTED: As listed below

TOXIKON NUMBER: 87C-0148.5

DATE SAMPLED: 02/11/87

DATE REPORTED: 03/04/87

CLIENT IDENT: 10090, Influent

SAMPLE LOCATION: Rt. 16 East Whitinsville, MA

SAMPLE DESCRIPTION: XX water soil oil sludge solid other:

SAMPLE CONTAINER: glass plastic 2 VOA vial

FIELD PREP:

PARAMETER	RESULT	UNITS	MDL*	INST.	Date of Analysis
Volatile Halocarbons		ug/L		GC	02/18/87
Chloromethane	-		2		
Bromomethane	-		2		
Vinyl Chloride	-		10		
Dichlorodifluoromethane	-		2		
Chloroethane	-		2		
Methylene chloride	-		10		
Trichlorofluoromethane	-		2		
1,1-Dichloroethene	-		2		
1,1-Dichloroethane	10		2		
Trans-1,2-Dichloroethene	6		2		
Chloroform	-		2		
1,2-Dichloroethane	-		2		
1,1,1-Trichloroethane	9		2		
Carbon Tetrachloride	-		2		
Bromodichloromethane	-		2		
1,2-Dichloropropane	-		2		
Trans-1,3-Dichloropropane	-		2		
Trichloroethene	2		2		
Cis-1,3-Dichloropropene	-		2		
1,1,2-Trichloroethane	-		2		
Dibromochloromethane	-		2		
2-Chloroethylvinylether	-		2		
Bromoform	-		2		
Tetrachloroethene	-		2		
1,1,2,2-Tetrachloroethane/					
Tetrachloroethene	3		2		
Chlorobenzene	-		2		
1,4-Dichlorobenzene	-		2		
1,3-Dichlorobenzene	-		2		
1,2-Dichlorobenzene	-		2		

"-" = Non-Detectable,

Reference of this analysis is 3: as cited on the cover page of this report.
 *MDL - Method Detection Limits (same units as the Results).

TABLE 2

Groundwater Quality Summary

Air Stripper Influent

White Consolidated Industries

Whitinsville, MA

Sample Date	Total V.O.C.s by E.P.A. Methods 601, 602 (p.p.b.)
6/13/86	102
6/24/86	748
7/08/86	117
7/18/86	130
7/23/86	112
8/06/86	187
9/ /86	No sample analyzed due to system repair
10/13/86	0 (method 602 only)
11/05/86	113
12/16/86	39
1/05/87	54
2/11/87	41

MULTI-STORY MILL COM

Building #7 (Machine Shop)

BUILDING

WATER TREATMENT PLATFORM

INTERCEPTER TRENCH

MC-10
GROUND 311.64
N/W Top 313.96

07°
52°37'-53"W

3°16'E

46°E
W, SEE DETAIL 'B'

OW-3

OW-2

OW-1

RW

MC-9
Lodge
GROUND
298.16

UNDERGROUND
TRENCH

5/17/82
TOP OF DAM - 305.06
TOP OF FLASH BOARDS -
- 306.44
U.S.G.S. ELEVATION DATUM

MUMFORD

RIVER

PROPOSED SALE

OF LAND BY

WHITE CONSOLIDATED INDUSTRIES, INC.

NORTHBRIDGE, MASS.